2.1.2 North 27th Street ("O" Street to I-80; 5.2 miles)

Tables 2a and 2b summarize the results of the travel time studies conducted along North 27th Street. The limits of this corridor were defined by the intersection at "O" Street on the south and Interstate 80 on the north. For a majority of its length, this corridor is characterized by commercial land uses. Between Cornhusker Highway and Kensington Drive, it is further characterized by commercial "big box" type uses (e.g., Kmart, Menards, Shopko, WalMart, HyVee, Super Saver, Sam's Club). North 27th Street has a posted speed limit of 35 mph between "O" Street and Fair Street, 40 mph between Fair Street and Cornhusker Highway and 45 mph from Cornhusker Highway to Interstate 80 (I-80).

From the results of the "after" studies and from the standpoint of an overall corridor, average speeds along North 27th Street exceed 25 mph. During the AM Peak and Midday time periods, average speeds greater than 30 mph were observed in both directions. In general, increases in average speeds were observed between the "before" and "after" travel time studies. Although deviations in the average speeds do exist, as represented by the upper and lower limits of the confidence interval, increases in average speed up to 2.3 mph were experienced. Decreases in average speed, less than one mile per hour in both directions, were experienced during the Midday time period.

Table 2a also summarizes the results of "before" travel time studies that were conducted during a low-volume, off-peak time period (10:30 p.m.–12:00 a.m.). These studies were conducted in association with the efforts of Task 4 (Section 5.0). Since no signal timing adjustments were made, "after" studies were not conducted.

As discussed in Section 2.0, different 'trigger speeds' are in effect for corridors with different free flow speeds. As already mentioned in this section, the North 27th Street corridor is composed of groups of links with different posted speed limits, thus different free flow speeds. Individual links along the North 27th Street corridor that experienced "after" average speeds less than the corresponding 'trigger speed' for the corridor are summarized in Table 3.

As expected, the segments that experienced low average speeds are those links that are defined by a major intersection at the downstream end of the segment. At these intersections, approaches on the travel time corridor and the cross-street approaches are characterized by high traffic volumes. In addition to the high traffic volumes in all directions competing for traffic signal green time, these volumes also dictate the need for additional signal phases, resulting in high intersection delay and low travel speeds. Section 2.2 will discuss operations at these intersections in further detail.

During the AM Peak time period, average speeds between "Y" Street and Holdrege Street are further affected by school speed zone flashing beacons, which reduce the speed limit to 25 mph when activated.

From the detailed link statistics, as provided in Appendix A, additional conclusions can be drawn for operations along the North 27th Street corridor. For instance, in the southbound direction during the Midday time period, the link between "P" Street and "O" Street experienced an average of 1.1 stops. This indicates that on at least one occasion, the study vehicle waited through two signal cycles at the intersection of 27th/"O" Streets before continuing southbound. Operations similar to this occur in the southbound direction at the intersections of 27th/Superior Streets and 27th Street/Cornhusker Highway during the PM Peak time period.

Average speeds of the entire corridor do not accurately reflect average speeds through the heavily commercialized portions of the corridor, since north of Kensington Drive, the speed limit is posted at 45 mph and traffic signals were not in place at the time of the travel time studies. Evaluating the North 27th Street *sub-corridor* from "O" Street to Kensington Drive results in average travel times and average speeds summarized in Tables 4a and 4b.

Comparison of the average speeds of Table 1 ("O" Street to I-80) and Table 4b ("O" Street to Kensington Drive), the 1.8 miles (approximate) of roadway, between Kensington Drive and Interstate 80, without traffic signals, and with a posted speed limit of 45 mph, inflates the average speed of the entire corridor as much as 5.0 mph. However, as the north end of the North 27th Street corridor continues to develop, and traffic signals are constructed, average speeds in this area will decrease as well.